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Received: November 10th, 1999

Accepted: February 17th

Online-First: April 11th, 2000

News and Views: Environmental Life Cycle Assessment of Linoleum

CML report 151 – Title: Environmental Life Cycle Assessment of Linoleum – Authors: M. Gorree, J.B. Guinée, G. Huppes, L. van Oers

Introduction and goal

Forbo-Krommenie B.V. commissioned the Centre of Environmental Science (CML) to carry out an Environmental Life Cycle Assessment. The purpose of this study was to assess the environmental performance of linoleum floors, indicating possible options for improvement, and assessing the sensitivity of the results to methodical choices. The method followed in this study is based on Guinée et al. (2000) an update of the CML guide on LCA from Heijungs et al. (1992).

The functional unit was defined as: 2000 m² linoleum (produced by Forbo-Krommenie B.V. in 1998) used in an office or public building over a period of 20 years.

Results and conclusions

The growing of linseed turned out to be the process contributing most to many impact categories. Other important processes were:

- Oil and coal used for the production of maintenance products.
- The transport of raw materials.
- The incineration of linoleum.

Scenario analysis showed that uncertain data such as the pigments used and the type of VOC emitted can have a substantial influence on the outcome.

The major data gaps in the study are capital goods and chemicals (chemicals used for maintenance products, pesticides, catalysts, etc.). Sensitivity analysis showed that these gaps can lead to an underestimation of 1-10% for missing capital goods and 5-40% for missing chemicals. Therefore, the results should not be used to compare different production systems.

Based on the study, some options to improve the environmental performance of Forbo-Krommenie B.V. were formulated and also advise for further studies on linoleum was given.

Copies can be ordered as follows: T (+31) 71 527 74 85; F (+31) 71 527 55 87; e mail: eroos@rulcml.leidenuniv.nl; CML Library, P.O. Box 9518, 2300 RA Leiden, The Netherlands. Please mention report number 151, and name and address to whom the report is to be sent.